

REVIEW COMMENTS
on CALFED Alternatives Package
by U.S. Bureau of Reclamation
June 6, 1997

GENERAL

1. The actions contained in the common programs and their effects on the alternatives are not clearly depicted in this document. At this level of complexity it is difficult to evaluate the alternatives for technical adequacy.
2. It would be helpful to have an appendix to explain the rationale and technical bracketing parameters involved in each of the alternative configurations.
3. A more detailed discussion of the water quality standards being used and the possible modifications to Decision 95-6 would be useful to help explain potential future scenarios. At a minimum, we recommend a description of the State Board process and status.
4. Throughout the document there is use of popular terminology such as "ecosystem health". Defining these terms could avoid ambiguous interpretations and conflicts later in the process.
5. The CALFED planning process is unique and different from both the Federal and State traditional approaches. It would be helpful to define the specific differences (process considerations) and criteria (e.g., cost-benefit analysis).

NO ACTION

1. It is unclear exactly what specific components form "no action". It would be helpful to have a complete description of the no action alternative - projects, policies, procedures, modeling assumptions, etc.
2. Although there is a list of approaches to achieve water use efficiency, we recommend that a list of CVPIA and RRA policies be included.

COMMON PROGRAMS

General

1. It would be helpful to the reader if the four program goals could be stated in the introduction with the mission of the program, rather than following the brief summary of the common programs.
2. In summarizing the ERPP programmatic actions, the paragraph primarily centers on the actions and their effects on aquatic species. To avoid misinterpretation, the description should include targets and actions for terrestrial species as well.

3. There is a concern that the level of detail attained within each common program is significantly different, thus preventing an equitable evaluation of the proposed alternatives. The alternatives would be more credible if there was closer parity among common programs.
4. The water quality goal specifically states that the program would improve water quality by reducing water quality parameters of concern before they enter the Bay-Delta. It is also important to reduce water quality parameters of concern derived within the Bay-Delta.
5. In describing the ecological hub of the Central Valley, it would help to include San Francisco Bay, San Pablo Bay, Suisun Bay, rather than just the "Bay". Replacing "hub" with "critical component" may remove a characterization that might offend some people.

Water Quality Common Program

1. One of methods referenced to reduce the toxic effects of Agricultural drainage includes increased water use efficiency. Clarifying the linkages between the two programs (water use efficiency and water quality) with specific examples (e.g., actions or practices) would allow the reader to evaluate the program in a more comprehensive manner.
2. The Interagency Ecological Program (IEP) is charged with water quality monitoring in the San Francisco Bay-Delta. It is important to include a description of how IEP will be involved with CALFED's Comprehensive Monitoring Assessment and Research Plan.
3. Performance targets on Page 11 are defined as load reductions only, however, Appendix B includes several other methods to evaluate performance. Including these other methods and targets will help the reader better understand the work to be done.
4. Within Alternatives 1 and 2 the water quality programs actions and targets do not change. However, it appears that there are only minor modifications in Alternative 3. We are concerned that there is no substantive difference. A more detailed description of the differences within each alternative would clarify this question.
5. In Appendix B there are lists of indicators of success which may not adequately monitor the action(s) being taken. In a number of actions, improved survival of test organisms is the only indicator. Given the scientific uncertainty of such a method, we suggest expanding this list in number and detail.
6. Given the linkages between recycled water and water quality, it would be useful to include potential water use efficiency actions that are consistent with the water quality program.
7. It appears that the performance measures are not all consistent with the specified actions. As

an example, reducing the amount of toxicity in a river (performance measure) may not reduce the effects of certain toxins (action).

8. Under the action to reduce toxic effects of mercury, we recommend that the achievement of U.S. EPA 304(a) guidelines for the delta be expanded and the amount of reduction of mercury concentrations included.

9. The phrase "Unknown Toxicity" needs more explanation for adequate evaluation of the actions recommended.

10. Under the action to reduce impacts of sediment loading and subsequent turbidity, one of the performance measures includes the increase of juvenile anadromous fish production. Since there is no direct way of measuring the effects of sediment loading by the increase of juvenile anadromous fish production, we suggest that this measure either be removed from the list or included in all parameters possibly linked to fish production.

11. We believe that performance measures should be linked to the actions in such a manner which is useful for evaluation. Therefore we do not believe that the number of public workshops and other outreach activities is an adequate measure for the action to reduce the impacts of recreational water use and domestic waste.

12. The treatment or removal of Selenium is still in the experimental phase and listing it as a method to reduce the toxic effects of Selenium could be misleading.

13. Under the action to reduce the toxic effects of nutrient loadings, a more detailed explanation of the indicator of success (achievement of the Basin Plan Objectives) would be helpful.

14. Actions such as use of evaporation ponds for drainage impoundment are not highly recommended. We suggest listing technologies that are well known to be safe.

15. It is unclear if timed release of pollutant discharges will require new/additional storage facilities for these pollutants. If so, it is important to consider how viable this option is given the situations that have arisen with Kesterson Reservoir and Carson Sink.

16. On page 9, second paragraph: The summary on mine drainage actions in the Delta does not include copper, cadmium or zinc. Listing actions to reduce Mercury alone may give the impression that we are not taking actions for the other parameters of concern.

17. On page 11 the statement is made "to address potential toxicity to water and sediment." To clarify this sentence we suggest, "to address the potential toxicity of contaminated water and sediment."

Water Use Efficiency

1. It appears that the Water Use Efficiency Program may vary within each alternative, however there is no distinguishing differences explained in this document. To evaluate the effects of this common program we recommend that CALFED include potential water use efficiency measures.
2. The Water Use Efficiency Program could impact actions in the ERPP (e.g. fish screens) and water quality program, as well as water transfers. A more detailed list of linkages would clarify the specific effects of this common program.
3. Appropriate planning and implementation of water use efficiency measures are prerequisites for receiving "new" water. More detail needs to be included to explain what this means and what is required.
4. It is unclear if there will be funding for implementation.
5. It would be useful to include a description of what parameters will be assessed to judge when the "system" is operating efficiently enough to allow the construction of new storage facilities.

Levees

1. The levee improvements goal is to reach PL-99 standards. A detailed description of the standard would help the reader review the improvement actions being recommended. Also, correct characterization is PL84-99.
2. Unless there has been previous determination, it appears that 100 million cubic yards may be too low an estimate to meet the PL84-99 standards.
3. It is important to address why or why not certain levees legal status could change to "dam" standards and requirements if used for storage.
4. Defining terminology such as subsidence vs settlement would help the reader avoid misinterpretations.
5. Restoration and erosion control for in-channel islands will be very difficult to maintain due to the geomorphic realities. It may be wiser to leave these islands to natural forces.

6. The Levee System Integrity Program requires more detail to review or identify potential issues.
7. It is important to describe how the moving meander belt is linked to the ERPP.
8. The levee discussion implies that the only focus is on Delta levees. It would be useful to describe if there will be any efforts to improve or construct levees outside the Delta.
9. It will be important for analysis to define in the alternatives who will be responsible for operation, maintenance and liability of the new and improved levees.
10. There is concern that the statement "The Program will provide for uniform funding and guidance to increase the level of protection throughout the Delta", conflicts with statements made at the ClubFed Retreat. According to our minutes, it was said that the Federal Government will not provide funds for improving existing levees or repairing flood-damaged levees unless they meet the requirements of FEMA/COE standards prior to damage. Clarification on this issue is important so that everyone understands policies and procedures.
11. It is important to define what is meant by "an acceptably higher level of protection" (50 year flood, 100 year flood, 500 year flood, etc.) and if this level is with or without tidal influences.

Ecosystem Restoration Program Plan

1. It would be helpful to understand what tools will be used to assess the ERPP 400,000 AF in 10 days.
2. Throughout the Program there appears to be a heavy reliance on water transfers as a tool to accomplishing restoration actions. There is a concern that this is not a realistic approach, a list of (generally) potential sources of transferred water would be helpful. Perhaps this could be done by including examples of past transfers.
3. A more detailed definition of the Adaptive Management Approach and a list of triggers would be useful for evaluation.
4. It is important to describe how the Adaptive Management strategy will be modified in light of new and evolving scientific information.
5. The ERPP targets and objectives are focused on emulating natural conditions in an unnatural environment. Perhaps it would be more logical to simulate a natural hydrograph instead of historic assumed flows.

6. It is important to prioritize ERPP actions.
7. Considerable data concludes that water temperatures in the Delta are controlled by ambient air temperature. Therefore, there is a concern that water temperature targets in the Delta may be unrealistic. The alternatives description should share any information which proves otherwise.
8. The targets and actions regarding motorized boating in certain areas in the Delta may cause significant recreational impacts.
9. The flows required on the Sacramento River seem to be above historic occurrence for certain time periods. It is important to explain why these flows are needed.
10. It is important to characterize how and when the Trinity flows are incorporated into the Sacramento River.
11. A list of the indicator species and where they will be pertinent to a target would help the reader evaluate the actions more effectively.
12. It would be helpful to describe numeric goals for total acres committed to habitat restoration and total water needs.
13. In the Sacramento-San Joaquin Delta Ecological Zone Page 6, Food Web Target: Certain actions demonstrate a dependence upon a particular alternative (e.g., a relocation of the intake pumps). We recommend that the common program actions not be contingent upon specific alternative configurations at this time.
14. In the Sacramento-San Joaquin Delta Ecological Zone: Page 4, Water Temperature, Target: The water temperature should read between 60 °F and 65 °F.
15. Page 7, Predators, Actions: It is not clear what methods will be taken to remove predators from Clifton Court Forebay or what actions will be taken to avoid the reintroduction of predators into the Forebay.
16. On Page 9, Illegal and Legal Harvest of Fish and Wildlife, Target: There is a reference to target percentage reduction of illegal harvests. It is important to include the percentage under consideration.
17. In the Sacramento River Ecological Zone, Page 1, Stream Meander Belts, Actions: The action calls for the removal of riprap from the banks of the Sacramento river. It is unclear if this means that new levees would be constructed outside of the meander belts to protect the adjacent low farmlands from flood flows, or if the meander belts will be left to become riparian habitat for wildlife.

ALTERNATIVES

1. Some of the alternative configurations in this document have received past evaluations. The inclusion of the results of these studies may prove useful to the reader.
2. There appears to be a redundancy in the alternative descriptions, which make it difficult to distinguish differences. A summary table showing the specific differences would help identify the important issues.
3. It is our opinion that salinity management in the Delta is a zero-sum game. If structural modifications in the Delta cause there to be lower concentrations of bromine in the California Aqueduct, we believe there will be a steeper salinity gradient on the Sacramento River and more bromine present at the intake for the North Bay Aqueduct. Possible ways to address this concern are to conduct tracer studies with an injection point at Carquinez, Vernalis, Freeport and Turner Cut. At a minimum, the alternative needs to address this point in the description.

Alternative 1

1. According to our technical experts the velocities stated in the operation of Clifton Court may conflict with the fish screens. Further research would be required before implementation.
2. A more detailed explanation of water movement into an off aqueduct storage would be useful.
3. On Page 4, third bullet, Treatment Actions: It is unclear what is meant by "reducing pollutants in water diverted from the Delta" and for what purpose (e.g., agriculture, municipal and industry, other use, or combination of uses). One interpretation is treating diverted water to remove pollutants, but there may be others. The alternatives should provide options for how actions will be accomplished. (See ALTERNATIVE 2 - MODIFIED THROUGH DELTA CONVEYANCE, Page 4 and ALTERNATIVE 3 - DUAL DELTA CONVEYANCE, Page 4 also.)
4. On Page 7, we suggest that these bullets be redefined to read as follows: First bullet: New fish screens at the Skinner Fish Facility and the Tracy Fish Collection Facility; or Second bullet: Construct an intertie/interconnection between the Tracy Pumping Plant and the Clifton Court Forebay with a new fish screen at the inlet to the Clifton Court Forebay.
(See ALTERNATIVE 2 - MODIFIED THROUGH DELTA CONVEYANCE, Pages 7, 13, 16, and 19; ALTERNATIVE 3 - DUAL DELTA CONVEYANCE, Pages 6, 16, 19, 21, 25, and 28 also.)
5. On page 9, fourth bullet at the bottom of the page: There is a reference to the filling of groundwater storage facilities. It is unclear if these will be filled by groundwater recharge

basins, injection wells, or by other means and if we are looking at water trades, (i.e., surface water for ground water to the users over the subject aquifer). For the Aqueduct storage facilities, there needs to be a description of what additional pumping capacity will be required at the Banks Pumping Plant and if there is sufficient capacity in the Aqueduct to handle the additional water. Paragraph VIA of the CALFED BENCHMARK STUDY (1995C6F-CALFED-472) states that the present capacity of the Banks Pumping Plant averages 6,680 cfs with a peak capacity of 8,500 cfs. On Page 10, under Aqueduct Storage, the storage facility would require a diversion/discharge capacity of 3,500 cfs. It is unclear if this capacity is in addition to the normal flows for filling San Luis Reservoir and supplying customers of the Aqueduct. (See ALTERNATIVE 2 - MODIFIED THROUGH DELTA CONVEYANCE, Page 9, 10, and 16 and ALTERNATIVE 3 - DUAL DELTA CONVEYANCE, Page 10, 11, 19, 22, 26, and 29 also.)

Alternative 2

1. Meeting SWRCB 95-6 standard requirements before diversion may effect utility of this alternatives options.
2. On Page 6, third bullet item: Figure "ALTERNATIVE 2A" shows the entire McCormack-Williamson Tract flooded. A description of how this will be done is important (e.g., set back levees on the east, north, and west sides of the Tract from their present locations to the Consumnes River in order to flood the Tract.
3. It is unclear if the new "channel islands" would be allowed to move and be flooded during natural river flows and flood events and what would happen to the channel islands if river flows began to erode the islands.
4. On page 13, Storage: It is unclear if converting Holland Tract into a water storage facility will require pumping for filling or if it will be filled to high tide levels only by gravity. It is also unclear if this will require fish screening at the intake to the Tract
5. On page 15, last bullet: It is unclear if the existing facilities that are affected by the setback levees will be replaced or relocated. One example is the Los Vaqueros pumping plant and fish screen structure located on Old River. (See ALTERNATIVE 2 - MODIFIED THROUGH DELTA CONVEYANCE, Page 19; and ALTERNATIVE 3 - DUAL DELTA CONVEYANCE, Page 24 also.)
6. In the description of ALTERNATIVE 2E, second sentence: It would be helpful to explain in more detail the statement "the additional conveyance" and "eliminating the 10,000 cfs intake".
7. On page 17, next to last bullet: It is unclear how water will enter this system from the Sacramento River (e.g., through the Delta Cross Channel Gates and/or the Mokelumne River)

and what operation requirements will be (e.g., existing operations of Delta Cross Channel Gates).

8. On page 18, second and third bullet: There is reference to a weir intake and inflatable rubber dam, however they are not clearly shown on the drawing.

Alternative 3

1. The reasoning for bracketing the capacities of the isolated facilities (e.g 5000cfs-15000cfs) would help explain the configurations.

2. There seems to be a discrepancy between the text and a few of the alternative drawings. In ALTERNATIVE 3F, the diagram does not show the location(s) for the 5,000 cfs from "distributed pumps along the isolated storage and conveyance facility."

In ALTERNATIVE 3I the drawing does not agree with the description of the isolated conveyance channels. The drawing shows a 15,000 cfs screened diversion at Hood with an isolated channel emptying into the San Joaquin River at the southern end of the Rindge Tract. The isolated channel continues on the other shore of the San Joaquin River at the northern end of the Lower Roberts Island with an unscreened intake and empties into the Old River near the Clifton Court Forebay. The description of the Northern Isolated Channel states the isolated channel starts with a diversion on the San Joaquin River.

In ALTERNATIVE 3I drawing there is no siphon shown under the San Joaquin River for the isolated conveyance channel from Hood to connect with the unscreened isolated conveyance channel on the other side of the river.

3. On page 18, fifth bullet: It would help to clarify which cylindrical fish screens are being considered,(e.g., submerged cylindrical T screens or rotary drum screens).

OTHER ISSUES (not specific to the Alternatives Package)

1. There is a concern that the evaluation of power without a clearly defined affected environment or modeling results will result in a faulty analysis.

2. There have been discussions of using the CVPIA PEIS Power Affected Environment as the basis for the evaluation. However, the CALFED evaluation includes far more than just the CVP. At a minimum we recommend SWP power impacts be evaluated as well.

3. In assessing the impacts of power we feel it is important to understand the limitations of using DWRSIM as a tool. Some of these limitations are:

- a. The model only calculates monthly energy generation and consumption for the SWP and CVP. No estimates are made of available generating capacity or peak project use capacity needs.
- b. DWRSIM calculates a "net" energy for both the SWP and the CVP by subtracting the calculated at plant values for pumping from the at plant values for generation. This could mean that there is no estimate of transmission losses included.
- c. The energy calculation for CVP energy consumption (Project Use) is limited. The only pumping energy estimated is for CVP Pumping at Banks, Tracy Pumping Plant, and CVP San Luis. O'Neill and the CVP Dos Amigos are not included (even though State Dos Amigos is). To not include O'Neill pumping, means that CVP water wheeled through Banks for delivery to the San Luis Canal or storage in San Luis reservoir has a significantly higher energy cost than water the model shows going through Tracy (the combined Tracy and O'Neill energy use per acre-foot is almost identical to the Banks energy requirement). We recommend that an effort be made to account for all major CVP pumping plants.

4. A large part of the power impact assessment appears to be an evaluation of the energy used by construction equipment. We believe this level of analysis is inappropriate for a programmatic document.

5. In order to make the selection for the preferred alternative, it would be useful for decision makers if the qualitative and quantitative information was separated.

6. It is not clear what degree of uncertainties there will be for the analytical assumptions used in the EIR/EIS analysis.

7. Does CALFED have a list of criteria to be used to select an alternative if the analysis proves incomplete or inadequate?

8. The recommendations and actions do not appear to be substantiated by sufficient documentation. A table of references would be helpful.

9. Many of the actions are dependent upon other actions, agencies, locals, etc. It will be important to define who will implement which actions.

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Page 11

10. A long-term scientific review process would help guide adaptive management decisions, resolve conflicts and address scientific uncertainty.
11. If there has been any cost analysis conducted for the alternatives, it would be useful to include in the document for a more detailed evaluation of the criteria.
12. A definitive strategy for the analysis of groundwater storage would be very beneficial.
13. The impact analysis teams provide a productive forum for technical discussions. We are concerned that we have not heard about any "Team 6" meetings. It would be useful to ensure that the different teams understand the discussions of other teams.
14. We are concerned that there appear to be no analytical tools for evaluating the impacts (e.g., water needs) of ecosystem restoration activities.